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COMMUNICATIONS

Findings on Geriatric Medicine and Gerontology From the NBME Examinations

Edmund H. Duthie, Jr., M.D., Robert A. Kirsling, and Michael B. Donnelly, Ph.D.

Seven years have elapsed since the release of the report, *Aging and Medical Education*, by the Institute of Medicine (IOM) of the National Academy of Sciences (1). In the interim, much has been written regarding geriatric medicine as it relates to medical education (2–4). In 1983 the Association of American Medical Colleges (AAMC) published a document, "Undergraduate Medical Education Preparation for Improved Geriatric Care," which "provides guidelines for faculty use in assessing how well their education and training programs are preparing the next generation of physicians to treat the elderly with dignity and understanding and to deal more effectively with their medical and psychosocial problems" (5). Given the interest in geriatric medicine and gerontology, it is the purpose of the authors in this study to assess how much content in these areas was included in Part I and Part II of the National Board of Medical Examiners (NBME) examinations, how well students performed in these areas compared with other areas, and whether the amount of content had changed since the IOM report in 1978.

Materials and Methods

The questions on the 1983 NBME Part I and Part II examinations were reviewed by a geriatrician (E.H.D.) and a research assistant (R.A.K.) to determine the amount of geriatric medicine and gerontology content. The AAMC geriatric assessment guidelines for curriculum content were used to assist in item classification (5). IOM guidelines were employed for items dealing with pathology, since this was not included in the AAMC report. Items were initially categorized as (*a*) unquestionably reflecting geriatric medicine or gerontologic content, (*b*) peripherally relating to geriatric medicine or gerontology, or (*c*) nongeriatric. For obvious reasons, the pediatric portion of the NBME Part II examination and the obstetric questions of the obstetrics/gynecology portion were not included in the analysis. Data are reported as the number of items with gerontologic content and as a percent of all items on a given subject. When enough items (operationally defined as greater than five) were found to permit comparison, difficulty levels of gerontologic items were compared with nongerontologic items for all students who took the examinations. Testing data were based on a nationwide sample comprised of 12,069 students on Part I and 12,344 students on Part II. Item difficulty was defined as the percent of examinees answering the item correctly.

Results

Table 1 shows the results of the analysis. The subtests with the most geriatric content on the Part I examination were Behavioral Science (13.5 percent of all items) and Pathology (8.8 percent). Very few gerontology items were found among the other five subtests. In the Part II examination, Psychiatry contained the most geriatric items (11.0 percent), with the other subtests reporting a somewhat similar

The study reported here was supported in part by a geriatric medicine academic award (K07 AG-00178-02) from the National Institute on Aging.

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TABLE 1

Number and Percent of Gerontology Items on the 1983 Examinations of the National Board of Medical Examiners and Mean Percentage of National Sample of Students Answering Gerontology and Nongerontology Items Correctly*

Subtest	Gerontology Items		Students Answering Correctly†				
			Gerontology		Nongerontology		
	No.	Percent	Mean Percent	S.D.	Mean Percent	S.D.	
Part I							
Anatomy	1	0.7	—	—	—	—	—
Physiology	1	0.7	—	—	—	—	—
Biochemistry	2	1.4	—	—	—	—	—
Pathology	12	8.8	64.5	20.0	60.1	20.0	0.72
Pharmacology	1	0.7	—	—	—	—	—
Microbiology	0	0.0	—	—	—	—	—
Behavioral Science	19	13.5	64.0	23.9	66.9	21.1	−0.48
Part II							
Medicine	11	7.1	77.4	13.8	69.7	18.6	1.71
Surgery	8	5.2	61.1	22.2	65.3	19.9	−0.52
Gynecology	5	6.6	—	—	—	—	—
Preventive Medicine	10	6.5	76.6	17.2	69.4	19.6	1.19
Psychiatry	17	11.0	64.7	23.6	65.9	19.6	−0.20

* The total number of students taking the 1983 NBME examinations was 12,069 for Part I and 12,344 for Part II.

† Blanks indicate that results of subtest were not analyzed because of the small number of gerontologic items in the test.

number of items as a percent of the total (from 5.2 to 7.1 percent). The total mean percentage of gerontologic items was 3.8 percent on Part I and 7.3 percent on Part II.

When enough items were present to permit comparison, *t*-tests were used to test differences between the percentage of students answering gerontologic and nongerontologic items correctly. In all cases, the differences were not significant.

Discussion

In its 1978 report, the IOM reviewed the 1977 NBME examinations for "age-related" content (1). The report estimated that 4 percent of the questions on Part I and 5.6 percent of the questions on Part II were age-related. Gerontology item analysis by subtests was not made.

Despite a growing elderly population and widespread acknowledgment of the need for student exposure to geriatric medicine, the NBME examinations have changed very little in this area in the past five years. Course directors, department chairmen, deans, and students find little incentive to increase the emphasis on geriatric medicine or gerontology if certifying examinations do not place much emphasis on these areas. Particularly notable for a paucity of questions on gerontology are the areas of physiology and pharmacology. There is a large amount of information in both areas which needs to be learned by people who will be caring for adults. For example, it is estimated that elderly patients consume 25 percent of the drugs prescribed in the United States (6) yet compose only 12 percent of the population. Unfortunately, some major textbooks (7, 8) have yet to identify gerontology as a separate content area for students to study. The Behavioral Science and Psychiatry subtests of the NBME examinations have more geriatric/gerontologic content than do the other subtests. Questions on delirium, dementia, depression in later life, and psychosocial

changes with age were found regularly.

The NBME examinations are psychometrically well constructed as determined by consistent student performance on the gerontologic and nongerontologic items. Thus, it might be concluded that medical students are acquiring gerontologic knowledge in a similar degree to acquiring knowledge in other areas, as measured by the NBME. The results reported here were limited, since only half of the NBME subtests were analyzed due to the small number of gerontologic items in the others (6 out of 12).

The question arises concerning how much content is enough. Although the elderly account for 12 percent of the population in the United States, they account for 37 percent of short hospital stays and 85 percent of the long-term-care beds (9). Practitioners who care for adults recognize the considerable amount (up to 50 percent) of time which they spend caring for their elderly patients (10). Standardized examinations should reflect topics which are important for students to know in order to be competent practitioners. The lack of emphasis on geriatric medicine and gerontology seems inappropriate given the demographic trends and considering physician utilization by elderly persons. It may be appropriate, therefore, to consider including a gerontologic subtest within the examinations of the National Board of Medical Examiners.

References

1. BEESON, P. B. (Chairman). *Aging and Medical Education.* Report of a Study by a Committee of the Institute of Medicine. Washington, D.C.: National Academy of Sciences, 1978.
2. REICHEL, W. Geriatric Medical Education: Developments Since the American Geriatrics Society Conference on Geriatric Education, 1976–77. *J. Am. Geriatr. Soc.*, **29**:1–9, 1981.
3. ROBBINS, A. S., and BECK, J. C. Guidelines for Graduate Medical Education in Geriatrics. *J. Med. Educ.*, **57**:762–768, 1982.
4. *Report on Education and Training in Geriatrics and Gerontology.* Washington, D.C.: U.S. Department of Health and Human Services, 1984.
5. JOHNSON, J. E., III (Chairman). *Proceedings of the Regional Institutes on Geriatrics and Medical Education.* Washington, D.C.: Association of American Medical Colleges, 1983.
6. VESTAL, R. (Ed.). Geriatric Pharmacology: An Overview. In *Drug Treatment in the Elderly.* Sydney, Australia: ADIS Health Science Press, 1984.
7. GILMAN, A. G., GOODMAN, L. S., and GILMAN, A. (Eds.). *The Pharmacologic Basis of Therapeutics* (Sixth Edition). New York, New York: Macmillan, 1980.
8. GUYTON, A. C. (Ed.). *Textbook of Medical Physiology* (Sixth Edition). Philadelphia: W. B. Saunders, 1981.
9. *A Chartbook of the Federal Council on the Aging* (DHHS Publication No. [OHDS] 81-20704). Washington, D.C.: U.S. Department of Health and Human Services, 1981.
10. KANE, R. L., SOLOMON, D., BECK, J., KEELER, E., and KANE, R. A. The Future Need for Geriatric Manpower in the United States. *N. Engl. J. Med.*, **302**:1327–1332, 1980.

Factors Affecting the Selection of Psychiatry And the Distribution of Psychiatrists

Earl L. Loschen, M.D., Gabriella M. D'Elia, Ph.D., and M. Patricia Sheehan

Issues in the recruitment of physicians into psychiatry and the maldistribution of psychiatric manpower have been common topics of concern since the middle of the last decade. Investigators have examined a variety of demographic and educational factors influencing recruitment into psychiatry and the distribution of health manpower. However, studies about recruitment have generally not been concerned with issues of psychiatric man-

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